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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,529	03/13/2001	Akira Shiokawa	NAK1-BO21	2114

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SNELL & WILMER LLP
1920 MAIN STREET
SUITE 1200
IRVINE, CA 92614-7230

EXAMINER

ANYASO, UCHENDU O

ART UNIT PAPER NUMBER

2675

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9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/805,529

Applicant(s)

SHIOKAWA ET AL.

Examiner

Uchendu O Anyaso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. **Claims 1-34** are pending in this action.

Claim Rejections - 35 USC ' 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. **Claims 1-3, 6, 12, 15, 16, 18, 23, 27, 28-31, 33 and 34** are rejected under 35

U.S.C. 102(e) as being anticipated by *Nagai* (U.S. Patent 6,160,349).

Regarding **independent claims 1, 2, 31, 33 and 34**, and for **claims 3, 6**, Nagai teaches an invention that is directed to an AC type plasma display panel comprising: a pair of substrates; a plurality of discharge pixel cells formed between the pair of substrates; and a pair of sustain electrodes formed on one of the pair of substrates, to which sustain pulses are applied to control discharge at each of the plurality of discharge pixel cells so as to alternatively reverse polarity between the pair of sustain electrodes to make an instantaneous average voltage almost constant at the pair of sustain electrodes during a sustained discharge period for each of the discharge pixel cells (column 3, lines 1-10).

Furthermore, Nagai teaches the concept of successively applying a plurality of sustain pulses which alternate in polarity by teaching a surface discharge AC type PDP (see figure 12) wherein a plurality of alternating sustain pulses are successively applied to each of the plurality

of discharge cells to perform a sustain discharge in the selected discharge cells (*see* figure 15, column 10, lines 53 through column 11, lines 6).

Also, Nagai teaches pulse waveforms that show that the current waveform is formed when the sustain pulse is applied wherein the current waveform is a waveform in which a time from when a peak is reached to when a fall is completed is no more than triple a time from when a rise is started to when the peak is reached (*see* figures 15).

Regarding **independent claims 12, 15, 23, 27 and 29**, and for **claims 13, 16, 18, 28 and 30**, Nagai teaches an invention that is directed to an AC type plasma display panel comprising: a pair of substrates; a plurality of discharge pixel cells formed between the pair of substrates; and a pair of sustain electrodes formed on one of the pair of substrates, to which sustain pulses are applied to control discharge at each of the plurality of discharge pixel cells so as to alternatively reverse polarity between the pair of sustain electrodes to make an instantaneous average voltage almost constant at the pair of sustain electrodes during a sustained discharge period for each of the discharge pixel cells (column 3, lines 1-10).

Furthermore, Nagai teaches the concept of successively applying a plurality of sustain pulses which alternate in polarity by teaching a surface discharge AC type PDP (*see* figure 12) wherein a plurality of alternating sustain pulses are successively applied to each of the plurality of discharge cells to perform a sustain discharge in the selected discharge cells (*see* figure 15, column 10, lines 53 through column 11, lines 6).

Furthermore, Nagai teaches pulse waveforms that show that immediately before a leading edge of each sustain pulse is applied to the discharge cell, the driving circuit applied a pulse that

is opposite in polarity to the sustain pulse, to the discharge cell for a predetermined period (*see* figures 15).

4. **Claims 7, 8, 11, 14, 19, 20, 22, 25 and 32** are rejected under 35 U.S.C. 102(e) as being anticipated by Miyazaki (U.S. Patent 5,909,199).

Regarding **independent claims 7, 19 and 25**, and for **claims 8, 11, 20 and 22**, Miyazaki teaches an invention that relates to a circuit for driving a plasma cell used in a display device or the like, and more particularly to a plasma driving circuit for sequentially discharging and driving a plurality of plasma channels provided in a plasma cell (column 1, lines 5-13).

Furthermore, Miyazaki teaches a gas discharge panel in which a plurality of discharge cells are arranged in the form of a matrix between the pair of substrates (*see* figure 8, column 6, lines 34-63).

Also, Miyazaki teaches that there is provided a plasma driving circuit that sequentially discharges and drives a plurality of plasma channels wherein a constant current source is connected in common to complementary switches and supplies a constant discharge current thereto (column 1, lines 53-61) such that a scanner sequentially turns on and off the complementary switches under control in order to distribute the discharge current sequentially to the corresponding plasma channels (column 1, lines 62-65).

Furthermore, Miyazaki teaches pulse waveforms that show that immediately before a leading edge of each sustain pulse is applied to the discharge cell, the driving circuit applied a pulse that is opposite in polarity to the sustain pulse, to the discharge cell for a predetermined period (*see* figures 10A, 10B).

Regarding **independent claims 14 and 32**, Miyazaki teaches an invention that relates to a circuit for driving a plasma cell used in a display device or the like, and more particularly to a plasma driving circuit for sequentially discharging and driving a plurality of plasma channels provided in a plasma cell such that a technique of suppressing a rush current (surge) derived from an internal capacity of a plasma driving circuit is employed (column 1, lines 5-13).

Furthermore, Miyazaki teaches a gas discharge panel in which a plurality of discharge cells are arranged in the form of a matrix between the pair of substrates (*see* figure 8, column 6, lines 34-63).

Also, Miyazaki teaches that there is provided a plasma driving circuit which fundamentally comprises a plurality of complementary switches, a constant current source and a scanner so as to sequentially discharge and drive a plurality of plasma channels wherein the plurality of complementary switches are provided correspondingly to individual plasma channels wherein the constant current source is connected in common to each of the complementary switches and supplies a constant discharge current thereto (column 1, lines 53-61). The scanner sequentially turns on and off the complementary switches under control to thereby distribute the discharge current sequentially to the corresponding plasma channels (column 1, lines 62-65).

Furthermore, Miyazaki teaches how FIG. 9 typically shows an actual structure of the plasma addressed liquid crystal display device in FIG. 8 wherein this device has a laminated flat panel structure where a liquid crystal cell 21 and a plasma cell 22 are superposed integrally via a microsheet glass 23 as a dielectric sheet (column 6, lines 64 through column 7, line 1, figure

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8, '9 at 21, 22). The liquid crystal cell 21 is composed by the use of an upper glass substrate 24 and is stuck to the microsheet glass 23 with a predetermined gap kept therebetween (column 7, lines 1-7, figure 9 at 24, 26).

Furthermore, Miyazaki teaches pulse waveforms that show that the current waveform is formed when the sustain pulse is applied wherein the current waveform is a waveform in which a time from when a peak is reached to when a fall is completed is no more than triple a time from when a rise is started to when the peak is reached (*see* figures 3A, 3B, 4A, 4B, 5A-5D).

Claim Rejections - 35 USC ' 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 4, 5, 9, 10, 17, 21, 24 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Nagai* (U.S. Patent 6,160,349) in view of Miyazaki (U.S. Patent 5,909,199).

Regarding **claims 4, 5, 9, 10, 17, 21, 24 and 26**, in further discussion of claim 3, 8, 16, 20, 23 and 25, Nagai does not teach how the value of the sustain pulse voltage. On the other hand, Miyazaki teaches this concept by teaching a voltage-current waveform obtained when the internal capacity is 1nF, and 10nF wherein when the internal capacity is 1 nF, the constant current response is as fast as 1 microsecond or so, and in a case where the internal capacity is 10 nF, the constant current response is rendered so slow as 10 microseconds, whereby the

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waveform is not kept at a fixed level during the discharge period (column 8, lines 13-21, figure 10A, 10B).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Nagai and Miyazaki because while Nagai teaches how to successively applying a plurality of sustain pulses which alternate in polarity by teaching a surface discharge AC type PDP (see figure 12) wherein a plurality of alternating sustain pulses are successively applied to each of the plurality of discharge cells to perform a sustain discharge in the selected discharge cells (*see* figure 15, column 10, lines 53 through column 11, lines 6), Miyazaki teaches the duration of the such a sustain pulse. The motivation for combining these inventions would have been to suppress any undesirable discharge (column 8, lines 21-29, figure 10A, 10B).

Response to Arguments

7. Applicant's amendments and arguments filed September 25, 2003 have been fully considered but they are not persuasive.

Applicant amended independent claims 1, 2, 12, 15, 23, 27, 29, 31, 33 and 34 to include the feature of successively applying a plurality of sustain pulses which alternate in polarity between each pair of first and second electrodes. In response to these amendments, Nagai reference has been used to reject these independent claims because it teaches applicant's amendments, in addition to teaching all the other elements of these claims. Specifically, Nagai teaches the concept of successively applying a plurality of sustain pulses which alternate in polarity by teaching a surface discharge AC type PDP (see figure 12) wherein a plurality of alternating sustain pulses are successively applied to each of the plurality of discharge cells to

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perform a sustain discharge in the selected discharge cells (*see* figure 15, column 10, lines 53 through column 11, lines 6). Also, Nagai teaches an invention that is directed to an AC type plasma display panel comprising: a pair of substrates; a plurality of discharge pixel cells formed between the pair of substrates; and a pair of sustain electrodes formed on one of the pair of substrates, to which sustain pulses are applied to control discharge at each of the plurality of discharge pixel cells so as to alternatively reverse polarity between the pair of sustain electrodes to make an instantaneous average voltage almost constant at the pair of sustain electrodes during a sustained discharge period for each of the discharge pixel cells (column 3, lines 1-10).

Furthermore, applicant contends that Miyazaki fails to teach a particular generation of a pulse wave form in a discharge sustain period in an AC plasma display panel. Applicant further states that Miyazaki is directed to a DC plasma display panel, and contends that the manner in which a sustained pulse is applied in applicant's AC gas discharge panel is fundamentally different over that of a DC gas discharge panel (*see* Applicant's Remarks at Page 17). This is at the root of applicant's reasoning for distinguishing applicant's invention from Miyazaki. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., AC gas discharge panel) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant's claims a broad term of a "panel display apparatus". Nowhere in applicant's claims does applicant claim an AC gas discharge panel. As such, Miyazaki reads on applicant's broad claimed invention.

Hence, applicant's amendments and arguments are not persuasive.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uchendu O. Anyaso whose telephone number is (703) 306-5934. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Uchendu O. Anyaso

02/20/2004


CHANH NGUYEN
PRIMARY EXAMINER